CEPF FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: The Field Museum of Natural History

Project Title (as stated in the grant agreement): *Small Mammal Studies in Three Important Eastern Arc Mountains Sites for the Creation of Innovative Educational, Scientific, and Conservation Tools*

Implementation Partners for this Project:

Project Dates (as stated in the grant agreement): June 1, 2005 - December 31, 2008

Date of Report (month/year): February, 2009

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

In 2005, the Critical Ecosystem Partnership Fund granted the Field Museum support to A) survey three poorly understood Eastern Arc Mountains, B) produce educational outreach tools based on the information recorded during these surveys and C) create a website focused on the small mammals of the Eastern Arc Mountains. This report sums up the activities and products supported and generated by this grant.

III. ACHIEVEMENT OF PROJECT PURPOSE

***Project Purpose**: To increase the knowledge and local appreciation of the small mammal fauna of the three targeted Eastern Arc Mountains (and others by extension), by providing data and tools essential for effective conservation; specifically by enabling Tanzanians (both residents living in proximity to the sites, and professional biologists and conservationists) to monitor small mammal faunas of these and other Eastern Arc forests, further improve the knowledge of the threatened and endemic mammal species in the hotspot, and effectively conserve the maximum amount of biodiversity of the Eastern Arc Mountains.*

Planned vs. Actual Performance

Indicator	Actual at Completion
Purpose-level:	

1. *Small mammal fauna of largest forest sites within North Pare, Rebeho and Malundwe Mountains and a species by site analysis of all the Eastern Arc documented by December 2007.*	The Malundwe Mountains were surveyed in 2005, the North Pare Mountains in 2006 and the Rubeho Mountains in 2007. Every one of these surveys was the first systematic inventory involving the documentation and preservation of voucher specimens for each of the targeted montane systems. The survey of the Rubeho Mountains followed an earlier survey conducted by the Tanzania Forest Conservation Group to document the small mammals of forests of this area. The first two surveys have been published describing the faunas of each mountain and comparing it to other Eastern Arc sites. Results from the surveys of the Rubehos are being currently being analyzed for eventual publication.
2. *The key and subsequent studies are used to inform the conservation and monitoring of small mammal species requiring species-specific action, as well as key sites necessary for the conservation of threatened and restricted-range species*	As a result of the specimens and data collected during our surveys, together with analysis of data previously gathered, we expanded the website originally entitled "Tanzania Mammal Key" to a new version entitled "Mammals of Tanzania". The original site allowed the identification of Tanzanian mammals to the level of genus; the newer expanded site identifies these mammals to the level of species, and includes pages dedicated to various mammal species in Tanzania, with a focus on the mammals of the Eastern Arc and other mountains in Tanzania. The new site is still under construction, and will be for some time. In one sense, that was our original intention: we wanted to have a forum for presenting the most current information available for various mammals of the Eastern Arc and other threatened habitats in the country. Maps are presented for the species recorded during our surveys, to show specific localities where species were found.
3. *The key and subsequent studies are used to*	A pivotal aim of the Mammals of

inform corridor and forest restoration efforts that are critical for conservation of threatened and restricted-range species	Tanzania website pertains to efforts to conserve not only threatened taxa and/or habitat sites, but also to inform planning of corridors and restoration efforts. By posting the results of CEPF supported (and other) surveys, in both descriptive and map platforms, this website presents what is known about particular mammals species in particular forests. For example, the Eastern Montane Woodmouse, *Hylomyscus arcimontensis*, is a recently discovered mouse endemic to the Eastern Arc and Mt. Rungwe in Tanzania. Until our survey of the North Pares, this mouse was unknown from any mountain range north of the South Pare Mountains. Our survey not only documented the presence of this unique mouse in the North Pare Mountains, but in both of the largest forest reserves in the range. The specific forest localities where this and other rodents were documented are presented in a dedicated section focused on the North Pare Mountains. Such information is now available to those planning to monitor these forests, or restore nearby habitats. We plan to continually add to this site as more information becomes available.

Describe the success of the project in terms of achieving its intended impact objective and performance indicators.

The immediate successes of the project were the first ever surveys of the unique forests of the targeted mountains. Until these efforts the mammals of the Malundwe, North Pare and Rubeho Mountains were unknown. We documented significant range extensions of various endemic taxa, including Howell's Forest Shrew and the Eastern Montane Woodmouse, and provided a preliminary biogeographic assessment of the faunas in each of the habitats surveyed. For example, before our survey of the North Pares, a common question was whether the fauna of this range would be more similar to those of other Eastern Arc mountains to the south, or the fauna of Mt. Kilimanjaro, its closer neighbor to the north. In other words, can the term Eastern Arc (originally coined to describe the historical geology and geography of its members) be used for a specific mammalian fauna, or do small mammals occur on both ancient fault block mountains and more recent volcanoes? Our survey of the North Pares found evidence of the former. Species such as the Eastern Montane Woodmouse are not found on Mt. Kilimanjaro, but are common across the Eastern Arc.

We expect more success in the future as the Mammals of Tanzania website continues to grow and be used by resource managers, conservationists and biologists to track the natural history of the Eastern Arc faunas. We also envision ramifications from the posters, calendars and other educational outreach materials that we produced and delivered to various communities near the mountains we studied.

Were there any unexpected impacts (positive or negative)?

The collaborations we began with the Tanzania Forest Conservation Group, University of Dar es Salaam Department of Zoology and the Animal Behaviour Research Unit were incredibly fruitful and appear to be a springboard for future work in the region.

IV. PROJECT OUTPUTS

***Project Outputs**:*

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1: Distribution of data and publications, primarily through the World Wide Web, to Tanzanian biologists, students and conservationists (and databases maintained by UDSM and WCST) generated from detailed surveys of the small mammals (shrews, bats and rodents) in the forests of three Eastern Arc Mountains, and a species by site analysis of the fauna for all the Eastern Arc, resulting in a significantly improved understanding of these faunas, including species currently listed as globally threatened.	
***1.1.** Data collected during faunal surveys delivered to, and incorporated into the databases of University of Dar es Salaam and Wildlife Conservation Society of Tanzania. Distribution of data will be via the World Wide Web*	Data from the surveys of the three Eastern Arc sites have been delivered to the University of Dar es Salaam. The same data and resulting publications are available at www.fieldmuseum.org\tanzania
***1.2.** Publications in peer-reviewed literature (and "grey" literature distributed via the Web) documenting the small mammal fauna of the targeted Eastern Arc mountains, including the distribution and ecology of small mammals currently listed as globally threatened, and identifying gaps in our knowledge of the entire Eastern Arc mammal fauna.*	The following publications are listed at www.fieldmuseum.org\tanzania: Norbert J. Cordeiro, Nathalie Seddon, David R. Capper, Jonathan M.M. Ekstrom, Kim M. Howell, Isabel S. Isherwood, Charles A.M. Msuya, Jonas T. Mushi, Andrew W. Perkin, Robert G. Pople & W.T. Stanley. 2005. Notes on the ecology and status of some forest mammals in four Eastern Arc Mountains, Tanzania. Journal of East African Natural History 94:

	175-189. Stanley, W. T., A. M. Nikundiwe, F. A. Mturi, P. M. Kihaule & P. D. Moehlman. 2005. Small mammals collected in the Udzungwa Mountains National Park, Tanzania. Journal of East African Natural History. Journal of East African Natural History 94: 203-212. Stanley, W. T., J. Gunn & P. M. Kihaule. 2005. Results of a preliminary small mammal survey of Malundwe Mountain, Mikumi National Park, Tanzania. Journal of East African Natural History 94: 213-222. Stanley, W. T., M. A. Rogers, K. M. Howell & C. A. Msuya. 2005. Results of a survey of small mammals in the Kwamgumi Forest Reserve, East Usambara Mountains, Tanzania. Journal of East African Natural History 94: 223-230. Stanley, W. T., C. A. H. Foley, G. W. Norton & P. M. Kihaule. 2005. Differences between repeated small mammal surveys in two Tanzanian national parks. Tanzania Wildlife Research Institute: Proceedings of the fifth annual scientific conference, Arusha, Dec 1-3, 2005. Stanley, W. T., G. W. Norton, P. M. Kihaule, L. Collett & K. McQuaid. 2007. Additional notes on the small mammals of Malundwe Mountains, Mikumi National Park, Tanzania. Journal of East African Natural History 96:203-214. Stanley, W. T., P. M. Kihaule & M. J. Munissi. 2007. Small mammals of two forest reserves in the North Pare Mountains, Tanzania. Journal of East African Natural History 96:215-226.

	Stanley, W.T., Rogers, M.A., Senzota, R.B.M., Mturi, F.A., Kihaule, P.M., Moehlman, P.D., OConnor, B.M., 2007. Surveys of small mammals in Tarangire National Park., Tanzania. Journal of East African Natural History 96:47-71. In Press: Stanley, W. T. & L. Collett. Two unusual observations of the killing or eating of *Epomophorus* (Chiroptera) by other mammals in Tanzania. African Journal of Ecology.
1.3. *Synopsis of data delivered to Global Mammal Assessment databases for updating the red list status of small mammals*	This data is being formatted for delivery to GMA databases
Output 2: Production and distribution of bilingual educational outreach tools such as posters and booklets, to achieve an increased awareness and conservation commitment by local residents regarding the mammalian biodiversity of the key sites in their area.	
2.1. *Posters and booklets produced and delivered by 2007 to relevant Regional, District and village authorities. Deliveries to be made by Stanley and/or other institutions such as Tanzania Forest Conservation Group*	The following outreach products were produced and delivered to Tanzania Forest Conservation Group and other organizations for delivery: **<u>Calendars:</u>** 2007 Eastern Arc Mountains Small Mammal Calendar 2008 Bats of Tanzania Calendar 2008 Eastern Arc Mountains Small Mammal Calendar **<u>Booklets:</u>** 2003 - Small Mammals of Mt. Kilimanjaro 2004 - The Small Mammals of Mahale Mountains National Park (In Progress) - Small Mammals of the Eastern Arc Mountains **<u>Posters:</u>** 2005 - The Small Mammals of Mt. Malundwe in Mikumi Natioanl Park 2007 - Small Mammals of the Udzungwa Mountains 2007-08 - Small Mammals of the Eastern

	Arc Mountains – Version 2 **<u>Guide sheets:</u>** 2008 - Small Mammals of Tanzania
2.2. *Educational materials distributed on the web*	The products listed above are available at www.fieldmuseum.org/tanzania
Output 3: Production and distribution of a bilingual web-based identification Key to Eastern Arc mammal species (including demonstrations of methodologies for small mammal surveys), as a critically important tool for use in future biodiversity surveys, monitoring efforts and conservation actions of globally threatened species and key biodiversity sites.	
3.1. *Key to Eastern Arc mammals posted on website of the Chicago Field Museum*	The key is now posted at www.fieldmuseum.org\tanzania
3.2. *CD's distributed by 2007 to relevant Tanzanian educational and conservation institutions. Stanley to hand deliver with a seminar explaining use*	Stanley presented and explained the key at the annual TAWIRI meeting in December, 2007

Describe the success of the project in terms of delivering the intended outputs.

The educational outreach products and website have all been well received. The success that is the most important to us is yet to be measured, in that the ramifications of our efforts may be seen most profoundly in future years. We set out to raise the awareness of people about the unique fauna of the forests of the Eastern Arc Mountains through the educational outreach products. At the same time, we are providing an innovative tool in the Mammals of Tanzania website to allow the study of this fauna.

Were any outputs unrealized? If so, how has this affected the overall impact of the project?

V. SAFEGUARD POLICY ASSESSMENTS

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

VI. LESSONS LEARNED FROM THE PROJECT

Describe any lessons learned during the various phases of the project. Consider lessons both for future projects, as well as for CEPF's future performance.

Project Design Process: (aspects of the project design that contributed to its success/failure)

Project Execution: (aspects of the project execution that contributed to its success/failure)

VII. ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Date Received	Notes
		$		
		$		
		$		
		$		
		$		
		$		
		$		
		$		

***Additional funding should be reported using the following categories:**

- ***A*** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*
- ***B*** *Complementary funding (Other donors contribute to partner organizations that are working on a project linked with this CEPF project)*
- ***C*** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*
- ***D*** *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Provide details of whether this project will continue in the future and if so, how any additional funding already secured or fundraising plans will help ensure its sustainability.

VIII. ADDITIONAL COMMENTS AND RECOMMENDATIONS

Because of CEPF support, we now have a vastly improved understanding of three unique Eastern Arc mountain fauna and the relation of those specific mountains to other montane localities within Tanzania. Several innovative and flashy awareness-raising products have been produced and delivered to communities around these mountains, and a bilingual website covering all mammals of Tanzania, but focusing on the Eastern Arc fauna has been constructed, and is now available for use, with the capability of future

updates. Data resulting from the surveys is available on the Mammals of Tanzania website (www.fieldmuseum.org/tanzania), and will continue to contribute to publications documenting the evolution, natural history and conservation status of this unique montane archipelago.

VIII. INFORMATION SHARING

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. One way we do this is by making programmatic project documents available on our Web site, www.cepf.net, and by marketing these in our newsletter and other communications.

These documents are accessed frequently by other CEPF grantees, potential partners, and the wider conservation community.

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